The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte MARY ELLEN DIGAN, PHILIP LAKE, and RICHARD MICHAEL WRIGHT

Appeal 2007-1633
Application 09/480,236
Technology Center 1600

Decided: August 21, 2007

Before TONI R. SCHEINER, DONALD E. ADAMS, and ERIC GRIMES, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 35-54, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

INTRODUCTION

The claims are directed to a recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof. Claims 35, 50, and 51 are illustrative:

35. A recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof comprising a CD3-binding domain and a Pseudomonas exotoxin (PE) mutant, said PE mutant having ADP-ribosylating and translocation functions but substantially diminished cell-binding ability.

50. A recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof, wherein the polypeptide comprises the polypeptide encoded by the complement of a nucleotide sequence having at least 300 bases which hybridizes to the nucleotide sequence of claim 49 (SEQ. ID. NO:2) under stringent hybridization conditions.

51. A recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof according to claim 36, wherein the CD3-binding domain comprises the Fv region, or a CD3-binding fragment thereof of an antibody selected from: monoclonal antibody UCHT-1, an antibody having a variable region which is at least 90% identical to the variable region of UCHT-1 as determined by use of the Bestfit program and is at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen and having at least one sequence segment of at least five amino acids of human origin.

The Examiner relies on the following prior art references to show unpatentability:

Neville 6,103,235 Aug. 15, 2000

Kreitman, R.J., et al., *Recombinant Single-Chain Immunotoxins Against T and B Cell Leukemias*, 13 Leukemia and Lymphoma 1-10 (1994).

Kussie, P.H., et al., *A Single Engineered Amino Acid Substitution Changes Antibody Fine Specificity*, 152 J. Immunology 146-152 (1994).

Chen, C., et al., *Enhancement and destruction of antibody function by somatic mutation: unequal occurrence is controlled by V gene combinatorial associations*, 14(12) The EMBO J. 2784-2794 (1995).

Kreitman, R.J., et al., *Targeting Pseudomonas exotoxin to hematologic malignancies*, 6 Cancer Biology 297-306 (1995).

The rejections as presented by the Examiner are as follows:

1. Claims 51-53 stand rejected under the written description provision of 35 U.S.C. § 112, first paragraph.

2. Claims 50 and 51 stand rejected under the enablement provision 35 U.S.C. § 112, first paragraph.

3. Claims 35-54 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Neville, Kreitman '95 and Kreitman '94.

We affirm.

DISCUSSION

Written Description:

Claims 51-53 stand rejected under the written description provision of 35 U.S.C. § 112, first paragraph. The Examiner finds that "[t]here is insufficient written description to show that Appellant [sic] was in

possession of a polypeptide encoded by one or more nucleotide sequences which hybridize to SEQ ID NO:2" (Answer 4). Contrary to the Examiner's assertion, however, there is no requirement that "a polypeptide be encoded by one or more nucleotide sequences which hybridize to SEQ ID NO:2" in any of Appellants' claims 51-53 or claims 35-36 from which they depend. Accordingly, we find the Examiner's assertion to be irrelevant to claims 51-53. The Examiner also finds that "the specification provides an insufficient written description of antibodies having a variable region which is at least 99% identical to the variable region of UCHT-I and is at least 95% as effective on a molar basis in competing with UCHT-1" (*id.*). As with the Examiner's foregoing assertion, the percent identity and percent effectiveness cited by the Examiner are not present in the rejected claims.

Apparently, recognizing the lack of precision in his statement of the rejection, the Examiner states that "'[a]s understood by Appellants, there are two aspects to the present ground of rejection, the first concerns the 90% identity language and the second concerns the 90% effectiveness language.'" (Answer 9). According to the Examiner "[t]hese are precisely the aspects necessitating the rejection." Therefore, notwithstanding the statement of the Examiner's rejection, the Examiner's concern is the language in claim 51 concerning the phrases "at least 90% identical," and "at least about 90% as effective" (*id.*; claim 51).

Claims 52 and 53 depend from claim 51. Claim 51[1] is drawn to a recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof that comprises a CD3-binding domain and a Pseudomonas exotoxin (PE) mutant. The claim requires that the PE mutant has ADP-ribosylating

[1] Claim 51 depends from claim 36, which depends from claim 35.

and translocation functions but substantially diminished cell-binding ability. The CD3-binding domain comprises an anti-CD3 antibody or CD3-binding fragment thereof. More specifically, the claim requires that the CD3-binding domain comprises the Fv region, or a CD3-binding fragment thereof of an antibody selected from:

(1) monoclonal antibody UCHT-1, and

(2) an antibody having

(i) a variable region which is at least 90% identical to the variable region of UCHT-1 as determined by use of the Bestfit program,

(ii) is at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen, and

(iii) has at least one sequence segment of at least five amino acids of human origin.

Therefore, the CD3-binding domain must be an Fv region, or a CD3-binding fragment thereof of an antibody selected from (1) monoclonal antibody UCHT-1 or (2) an antibody defined in the claim by its structural and functional properties. If the CD3-binding domain is not from monoclonal antibody UCHT-1 (e.g., the second alternative), claim 51 places two structural requirements on the antibody. The antibody must have:

(a) a variable region which is at least 90% identical to the variable region of UCHT-1 as determined by use of the Bestfit program, and

(b) at least one sequence segment of at least five amino acids of human origin.

In addition to these structural requirements, claim 51 provides the functional requirement that the antibody be at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen.

The problem is, however, that Appellants' Specification fails to provide a disclosure of which residues are required for the antibody to be at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen. In our opinion, a skilled artisan cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus that exhibit this functional property.

"A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials." *University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1405 (Fed. Cir. 1997 (bracketed material in original). The claims in *Lilly* were directed generically to vertebrate or mammalian insulin cDNAs. *See id.* at 1567, 43 USPQ2d at 1405. The court held that a structural description of a rat cDNA was not an adequate description of these broader classes of cDNAs.

The *Lilly* court explained that

> a generic statement such as. . . 'mammalian insulin cDNA,' without more, is not an adequate written description of the genus because it does not distinguish the claimed genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus.

Id. at 1568, 43 USPQ2d at 1406. Finally, the *Lilly* court set out exemplary ways in which a genus of cDNAs could be described:

> A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus.

Id. at 1569.

Our appellate reviewing court revisited the issue of describing DNA. *See Enzo Biochem, Inc. v. Gen-Probe Inc.*, 296 F.3d 1316, 63 USPQ2d 1609 (Fed. Cir. 2002). The *Enzo* court held that a claimed DNA could be described without, necessarily, disclosing its structure. The court adopted the standard that "the written description requirement can be met by 'show[ing] that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics . . . i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics.'" *See id.* at 1324, 63 USPQ2d at 1613 (emphasis omitted, ellipsis and bracketed material in original).

Our appellate review court has also noted that "*Eli Lilly* did not hold that all functional descriptions of genetic material necessarily fail as a matter of law to meet the written description requirement; rather, the requirement may be satisfied if in the knowledge of the art the disclosed function is sufficiently correlated to a particular, known structure." *Amgen, Inc. v.*

Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1332, 65 USPQ2d 1385, 1398 (Fed. Cir. 2003).

This standard applies to polypeptides as well as DNAs. *See University of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916, 925, 69 USPQ2d 1886, 1893 (Fed. Cir. 2004): "We agree with Rochester that *Fiers*, *Lilly*, and *Enzo* differ from this case in that they all related to genetic material whereas this case does not, but we find that distinction to be unhelpful to Rochester's position. It is irrelevant; the statute applies to all types of inventions. We see no reason for the rule to be any different when non-genetic materials are at issue."

With respect to the use of an assay to support written description, in *University of Rochester*, the patent claimed a method of selectively inhibiting the enzyme PGHS-2 (also known as COX-2) by "administering a non-steroidal compound that selectively inhibits activity of the PGHS-2 gene product to a human." *Id.* at 918, 69 USPQ2d at 1888. The patent "describes in detail how to make cells that express either COX-1 or COX-2, but not both . . . , as well as 'assays for screening compounds, including peptides, polynucleotides, and small organic molecules to identify those that inhibit the expression or activity of the PGHS-2 gene product.[']" *Id.* at 927, 69 USPQ2d at 1895.

The court held that the disclosure of screening assays and general classes of compounds was not adequate to describe compounds having the desired activity: without disclosure of *which* peptides, polynucleotides, or small organic molecules have the desired characteristic, the claims failed to meet the description requirement of § 112. *See id.* ("As pointed out by the district court, the '850 patent does not disclose just 'which "peptides,

polynucleotides, and small organic molecules" have the desired characteristic of selectively inhibiting PGHS-2.' . . . Without such disclosure, the claimed methods cannot be said to have been described.").

As in the *University of Rochester* case, Appellants' claimed invention defines a broad genus of CD3-binding domains (polypeptides having 90% identity to the variable region of UCHT-1 as determined by use of the Bestfit program and having at least one sequence segment of at least five amino acids of human origin) but this embodiment of the claim is limited to only those CD3-binding domains having a desired characteristic (being at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen). We recognize Appellants' argument that "one skilled in the art will have no trouble determining whether or not a particular sequence will meet the 90% identity requirement . . ." (Br. 6). While that may be true, just as in *University of Rochester*, the present specification does not disclose which CD3-binding domains having 90% identity to UCHT-1 and at least one sequence segment of at least five amino acids of human origin are capable of being at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen.

Granted, those skilled in the art could screen the antibodies encompassed by this embodiment of the claim for those having at least about 90% effectiveness on a molar basis in competing with UCHT-1 for binding to human CD3 antigen (*cf.* Br. 6). That, however, does not make up for the deficiency of the Specification's description. The *University of Rochester* court specifically noted that the patent at issue there disclosed screening assays to identify compounds having the desired characteristic, but

nonetheless held that the description was inadequate. The same holds true here.

Accordingly, we affirm the rejection of claim 51 under the written description provision of 35 U.S.C. § 112, first paragraph. According to Appellants, "[t]he claims stand or fall together as to each ground of rejection" (Br. 3). Accordingly, claims 52 and 53 fall together with claim 51.

Enablement:

Claims 50 and 51 stand rejected under the enablement provision 35 U.S.C. § 112, first paragraph. The claims stand or fall together, accordingly, we limit our discussion to claim 51. The Examiner finds that Appellants' disclosure fails to provide an enabling disclosure of "a recombinant immunotoxin polypeptide comprising an antibody having a variable region which is at least about 90% identical to the variable region of UCHT-1 and is at least about 90% as effective as UCHT-1 for binding human CD3" (Answer 4-5).

In this regard, the Examiner directs attention to Kussie and Chen to demonstrate that the substitution of a single amino acid can totally ablate antigen binding (Answer 5-6). Appellants agree (Br. 8). Nevertheless, Appellants submit that while it may be labor-intensive and time-consuming, their disclosure provides "suitable procedures for obtaining the immunotoxins of the invention." In this regard, Appellants assert that one skilled in the art could easily determine whether or not a particular polypeptide has 90% identity to the variable region of UCHT-1 using the Bestfit program (Br. 8-9). We agree.

Therefore, the issue distills down to whether one skilled in the art would be able to determine which CD3-binding domains having 90% identity to the variable region of UCHT-1 using the Bestfit program and at least one sequence segment of at least five amino acids of human origin, are also at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3 antigen. In this regard, Appellants direct attention to Hexham[2] to support the assertion that "determining the binding affinity of a given antibody for CD3 relative to UCHT-1 is well within the skill in the art . . ." (Br. 6). The problem with this argument, however, is that Hexham is a post-filing date reference. As set forth in *In re Glass*, 492 F.2d 1228, 1232, n. 6, 181 USPQ 31, 34-35, n. 6 (Fed. Cir. 1974), "later issuing patents or publications may not be relied upon to establish that the Specification is enabling under . . ." 35 U.S.C. § 112, first paragraph. Accordingly, we look to Appellants' Specification for an enabling description of determining whether a CD3-binding domain is at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3. However, we do not find, and Appellants do not identify, any disclosure in the Specification that teaches a person of skill in the art how to determine whether a CD3-binding domain is at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3. At best, we find that Appellants' Specification discloses that such CD3-binding domains are considered to be within the scope of their claimed invention (Specification 21).

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[2] Hexham et al., *Influence of relative binding affinity on efficacy in a panel of anti-CD3 scFv immunotoxins*, 38 Mol. Immunol. 397-408 (2001).

Enablement is a question of law, based on underlying findings of fact. *See, e.g., In re Wands*, 858 F.2d 731, 735, 8 USPQ2d 1400, 1402 (Fed. Cir. 1988). "When rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application." *In re Wright*, 999 F.2d 1557, 1561-62, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

"[T]o be enabling, the specification . . . must teach those skilled in the art how to make and use *the full scope of the claimed invention* without 'undue experimentation.'" *Wright*, 999 F.2d at 1561, 27 USPQ2d at 1513 (emphasis added), *quoted in Genentech, Inc. v. Novo Nordisk, A/S,* 108 F.3d 1361, 1365, 42 USPQ2d 1001, 1004 (Fed. Cir. 1997). Thus, "there must be sufficient disclosure, either through illustrative examples or terminology, to teach those of ordinary skill how to make and how to use the invention as broadly as it is claimed." *In re Vaeck*, 947 F.2d 488, 496 & n. 23, 20 USPQ2d 1438, 1445 & n. 23 (Fed. Cir. 1991), *quoted in Enzo Biochem, Inc. v. Calgene, Inc.,* 188 F.3d 1362, 1372, 52 USPQ2d 1129, 1138 (Fed. Cir. 1999).

On reflection, we find that there is no dispute on this record that single amino acid changes in the variable region of an antibody can affect antigen binding. We also find that Appellants' Specification fails to provide a description of the methodology useful in determining whether a CD3-binding domain is at least about 90% as effective on a molar basis in competing with UCHT-1 for binding to human CD3. Accordingly, we are compelled to agree with the Examiner that Appellants' Specification fails to

provide an enabling description of "a recombinant immunotoxin polypeptide comprising an antibody having a variable region which is at least about 90% identical to the variable region of UCHT-1 and is at least about 90% as effective as UCHT-1 for binding human CD3" (Answer 4-5).

Accordingly, we affirm the rejection of claim 51 under the enablement provision of 35 U.S.C. § 112, first paragraph. According to Appellants, "[t]he claims stand or fall together as to each ground of rejection" (Br. 3). Accordingly, claim 50 falls together with claim 51.

Obviousness:

Claims 35-54 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Neville, Kreitman '95, and Kreitman '94. Claim 35 is drawn to a recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof. The recombinant immunotoxin polypeptide comprises a CD3-binding domain and a Pseudomonas exotoxin (PE) mutant. Appellants' Specification defines CD3-binding domain as "an amino acid sequence capable of binding or otherwise associating with mammalian, and more preferably primate, and even more preferably, human, CD3 antigen on T cells or lymphocytes" (Specification 14).

Claim 35 requires that the PE mutant has ADP-ribosylating and translocation functions but substantially diminished cell-binding ability. According to Appellants' Specification "[d]isruption or deletion of all or substantially all of cell-binding Domain Ia has been found to substantially reduce the cell-binding capability and thus the non-specific toxicity of the native PE molecule" (Specification 24). Examples of PE mutants within the

scope of Appellants' claimed invention include PE40 (*id.*) and PE38 (Specification 25).

The Examiner finds that Neville teaches a recombinant immunotoxin polypeptide comprising an anti-human CD3-binding domain and the ADP-ribosylating exotoxin diphtheria toxin (DT) (Answer 6). The Examiner finds that Neville does not teach a recombinant immunotoxin polypeptide comprising a PE mutant (Answer 7). To make up for this deficiency, the Examiner relies on Kreitman '95 and Kreitman '94.

The Examiner finds that Kreitman '95 teaches an immunotoxic antibody comprising a PE mutant (PE38 and PE40) (*id.*). In addition, the Examiner finds that Kreitman '94 teaches an immunotoxic antibody comprising a PE mutant (PE40) (*id.*).

Based on this evidence, the Examiner concludes that it would have been prima facie obvious to substitute a PE mutant for the diphtheria toxin component of Neville's recombinant immunotoxin polypeptide (Answer 7-8).

In response, Appellants assert that "[a]lthough the bits and pieces of Appellants' claimed immunotoxin may be present in the prior art, the requisite incentive or motivation to combine these bits and pieces is lacking" (Br. 11). In this regard, Appellants assert that Kreitman '94 fails to teach the interchangeability of PE mutants with DT in immunotoxins (*id.*). Instead, Appellants point out that Kreitman '94 "[c]ompares the activities of several immunotoxins directed against Tac (not CD3 as presently claimed). The data in Tables 3 and 4 of the reference show the ability of different patients['] blood cells to be killed by the different immunotoxins. There is no predictability or pattern to the results" (*id.*). Therefore, Appellants assert

that "one could not predict the effectiveness of a given PE-Tac immunotoxin on a given cell population by knowing the activity of a given DT-Tac immunotoxin on that cell population" (*id.*). In further support of this assertion, Appellants direct attention to Batra[3] to teach that the relative activity of PE and DT based immunotoxins varies depending on the cell line used to test the immunotoxin (Br. 11-12). According to Appellants "[a]s far back as the seminal case of In re Papesch, 137 USPQ 43 (CCPA 1963), the courts have recognized that it is an error of law to fail to take into consideration the biological or pharmaceutical property of a claimed composition of matter" (Br. 12). Therefore, Appellants assert that "[b]ecause of the variability of immunotoxins as demonstrated in the cited art, it would not be obvious that Appellants' invention would be successful" (Br. 12). We disagree.

Claim 35 is drawn to a recombinant immunotoxin polypeptide or a pharmaceutically acceptable salt thereof that comprises a CD3-binding domain and a Pseudomonas exotoxin (PE) mutant, said PE mutant having ADP-ribosylating and translocation functions but substantially diminished cell-binding ability. There can be no doubt that "a compound and all of its properties are inseparable . . . ." *In re Papesch*, 315 F.2d 381, 391, 137 USPQ 43, 51 (CCPA 1963). On this record, the prior art recognizes that both DT and PE based immunotoxins have immunotoxin properties. While Appellants argue that the art illustrates that, under certain circumstances, the activity of DT based immunotoxins and PE based immunotoxins may vary

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[3] Batra, et al., *Single-Chain Immunotoxins Directed at the Human Transferrin Receptor Containing Pseudomonas Exotoxin A or Diphteria Toxin : Anti-TFR(Fv)-PE40 and DT388-Anti-TFR(Fv),* 11(4) Mol. Cell. Biol. 2200-2205 (1991).

relative to each other, it cannot be denied that both have the property of being an immunotoxin. Accordingly, the immunotoxin properties of the prior art and claimed immunotoxins have not been ignored on this record.

Now, while Appellants emphasize the differences in activity between DT and PE based immunotoxins, we note that there is no requirement in Appellants' claim 35 that the recombinant immunotoxin polypeptide be used for any particular purpose or have any activity other than ADP-ribosylating and translocation functions but substantially diminished cell-binding ability. Notwithstanding Appellants' argument that DT and PE based immunotoxins exhibit different activities relative to one another, there is no requirement in claim 35 that the recombinant immunotoxin polypeptide perform in a particular manner relative to another immunotoxin.

Therefore, the issue before this panel is whether it would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made to substitute the DT component of Neville's recombinant immunotoxin polypeptide with a PE mutant. In this regard, we note that Neville teaches that "[i]n contrast with . . . Pseudomonas exotoxin (PE) based immunotoxins, there is a potential problem using UCHT1-CRM9, or other DT-based immunotoxins, in the treatment of human diseases" (Neville, col. 22, ll. 13-16). Specifically, Neville teaches that "[m]ost people have a pre-existing anti-DT antibody titer which could potentially inhibit or alter the efficacy of these [DT based] immunotoxins" (Neville, col. 22, ll. 16-19). Accordingly, Neville goes about making DT mutants to circumvent "the inhibitory effect of pre-existing anti-DT antibodies" (Neville, col. 22, ll. 28-34). Thus, Neville recognizes an advantage in the use of PE relative to DT as a component of an

immunotoxin. Specifically, that people do not have a pre-existing antibody titer that could inhibit or alter the efficacy of a PE based immunotoxin.

Further, while Appellants direct attention to Batra to support their assertion that DT and PE based immunotoxins may exhibit different activities on different cell lines, Appellants appear to miss Batra's clear teaching that while the DT based immunotoxin was about threefold more active than a PE based immunotoxin on some cell lines, in no case was the DT based immunotoxin much more active (e.g., at least 100-fold) than the PE based immunotoxin, "whereas the reverse was observed" (Batra, bridging paragraph, pages 2203-2204). In addition, Batra states that

> active single-chain immunotoxins can be made with different toxin moieties . . . . With this information in hand, it should be possible to make active single-chain immunotoxins from the wide variety of toxins (plant, bacterial, and animal) that are now being made by chemical coupling methods . . . .

(Batra, 2204, col. 2, last paragraph.) Stated differently, notwithstanding Appellants' assertion to the contrary, Batra teaches that immunotoxins can be made from a wide variety of toxins. No doubt these immunotoxins may exhibit different activities relative to each other, but Appellants' claimed invention does not require any particular activity other than having ADP-ribosylating and translocation functions but substantially diminished cell-binding ability. As discussed above, the prior art of record teaches DT and PE based immunotoxins wherein both the DT and PE components have ADP-ribosylating and translocation functions but substantially diminished cell-binding ability.

Based on the teaching of the prior art relied upon by the Examiner, we find that it would have been prima facie obvious to a person of ordinary skill

in the art at the time the invention was made to substitute a PE mutant for the DT component of Neville's immunotoxin.

As set forth in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741-42, 82 USPQ2d 1385, 1397 (2007), "[i]n determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103"; *see also In re Beattie*, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992) ("[T]he law does not require that the references be combined for the reasons contemplated by the inventor.").

On reflection, we find no error in the Examiner's prima facie case of obviousness. Accordingly, we affirm the rejection of claim 35. Claims 36-54 fall with claim 35.

CONCLUSION

In summary, we affirm all rejections of record.

AFFIRMED

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

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